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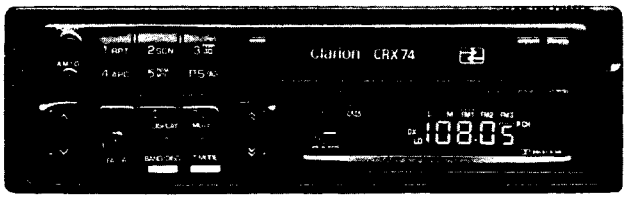
clarion Service Manual

Published by Service Engineering Section



CRX74

FM•MPX/MW/LW RADIO CASSETTE COMBINATION

Model CRX73 (PE-9607A)
Model CRX74 (PE-9608A)

■ SPECIFICATIONS:

(The specifications for this product were determined and are presented in accordance with specification standards established by EIA.)

Radio section

Circuit system:	Superheterodyne
Tuning system:	Electronic tuning
Receiving frequency:	LW 153kHz to 281kHz MW 531kHz to 1,602kHz UKW (FM) 87.5MHz to 108MHz
Intermediate frequency:	LW, MW 450kHz UKW (FM) 10.7MHz

Tape section

Reproduction system:	Auto reversing 4 track, 2channel stereo cassette tape playback 8monaural also capable)
Tape speed:	4.76cm/sec. (1-7/8 ips)

Composite

Load impedance:	4Ω × 4, 4Ω × 2
Power output:	18W × 4, 27W × 2
Power supply voltage:	DC 14.4V (10.8V to 15.6V) Negative ground
Power consumption:	Less tan 10A (at max. output)
Dimensions:	Width 182mm Height 48mm Depth 162mm
Weight:	1.8kg

■ COMPONENTS:

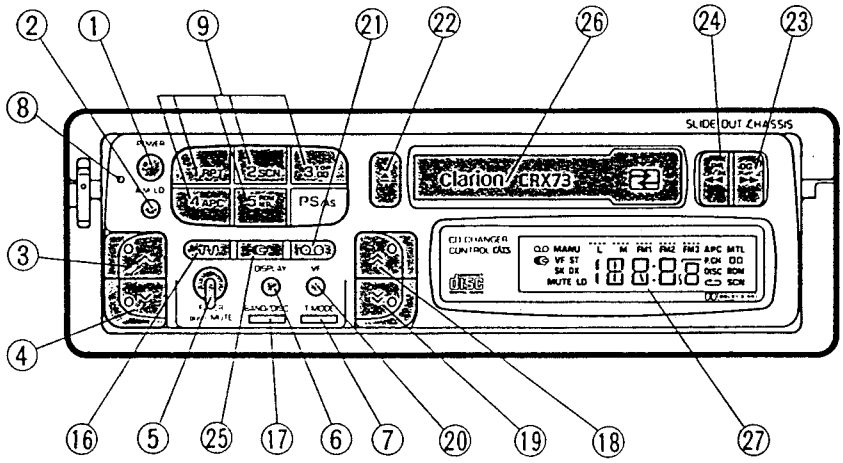
- **CRX74 (PE-9608A-A)**

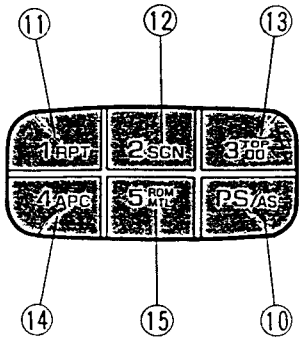
Mounting bracket	300-6954-00	1
Parts bag	921-8735-00	1
Spacer	345-3653-01	1
Tap screw	700-5016-80	1
Screw	716-0726-01	1
Hex-nut	722-0314-00	1
Plate nut	725-0216-00	1
Parts bag	921-8744-00	1
Sticker	291-0041-03	2

• Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
• "Dolby" and the double-D symbo ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

■ OPERATIONS:

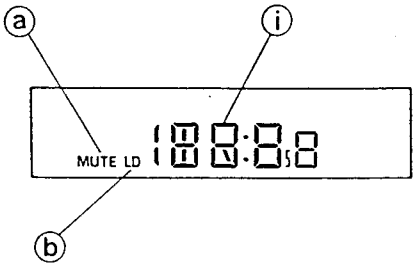
• **CRX73,CRX74**



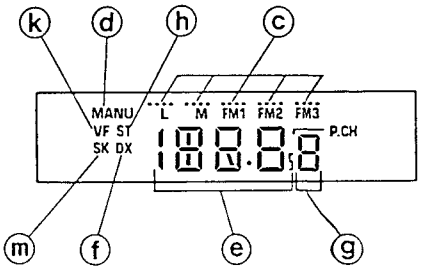


• **DISPLAY**

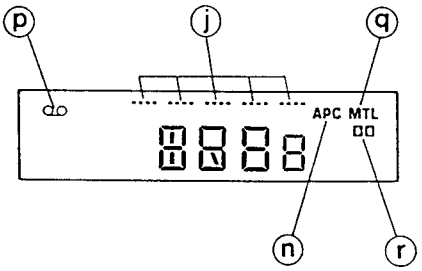
GENERAL OPERATION



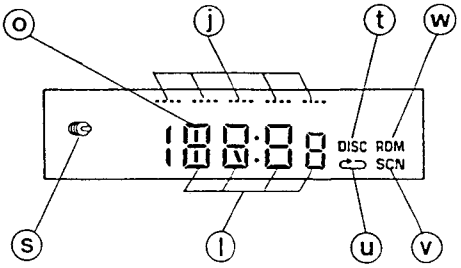
TUNER OPERATION



CASSETTE TAPE OPERATION



CD CHANGER CONT. OPERATION

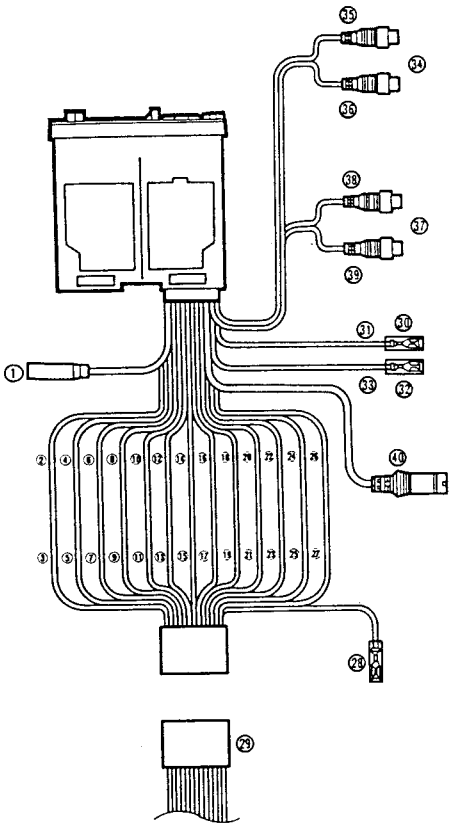


① Power Switch **(POWER)**
② Audio Mode Selector Button/Loudness Switch **(A.M/LD)**
③ Up Button **(Volume, Bass, Treble, Balance, pre-Fader)**
④ Down Button **(Volume, Bass, Treble, Balance, pre-Fader)**
⑤ Audio Muting Button/Speaker Fader Control Knob **(push MUTE/FADER)** • push MUTE:CRX73 Only
⑥ Display Mode Selector Button **(DISPLAY)**
⑦ Tuning Mode Selector Button **(T.MODE)**
⑧ Reset Button
⑨ Preset Buttons (1 to 5)
⑩ Preset Scan/Auto Store Button **(PS/AS)**
⑪ Repeat Playback Button **(RPT)**
⑫ Scan Button **(SCN)**
⑬ Top Play Button **(TOP)**/Dolby B NR Switch (▯▯)
⑭ Automatic Programme Control Button **(APC)**
⑮ Random Playback Button **(RDM)**/Metal Tape Selector Button **(MTL)**
⑯ Tuner Mode Selector Button (ᔓ)
⑰ Band Selector Button/Disc Up Selector Button **(BAND/DISC)**
⑱ Up Tuning Button/Forward Search Button (⩔)
⑲ Down Tuning Button/Reverse Search Button (⩒)
⑳ Traffic information button **(VF)** :CRX73
Audio Muting Button **(MUTE)** :CRX74
㉑ Tape Mode Selector Button (⌾)
㉒ Eject Button (⏏)
㉓, ㉔ Fast Forward and Rewind/Programme Button **(▶▶, ◀◀, PROG)**
㉕ CD Changer Mode Selector Button (◉)
㉖ Cassette Tape Slot Door
㉗ Display

■ **DISPLAY**
ⓐ Audio Muting Indicator **(MUTE)**
ⓑ Loudness Indicator **(LD)**
ⓒ Band Indicators **(L/M/FM1/FM2/FM3)**
ⓓ Manual Tuning Indicator **(MANU)**
ⓔ Radio Frequency Display
ⓕ DX Indicator **(DX)**
ⓖ Preset Channel Indicator **(P.CH)**
ⓗ Stereo Reception Indicator **(ST)**
ⓘ Display Area: Disc No., Track No., Play Time, Volume/Bass/Treble/Balance/Fader Levels, CATS Code, Phone Mute, Radio Frequency
ⓙ Transport Indicator
ⓚ VF Indicator **(VF)** :CRX73 Only
ⓛ Play Time Display
ⓜ SK Indicator **(SK)** :CRX73
ⓝ Automatic Programme Control Indicator **(APC)**
ⓞ Disc Number Indicator and Track Number Indicator
ⓟ Tape Mode Indicator (⌾)
ⓠ Metal Tape Indicator **(MTL)**
ⓡ Dolby B NR Indicator (▯▯)
ⓢ CD Changer Mode Indicator (◉)
ⓣ Disc Indicator **(DISC)**
ⓤ Repeat Playback Indicator (⮌)
ⓥ Scan Indicator **(SCN)**
ⓦ Random Playback Indicator **(RDM)**

■ WIRE CONNECTION:

• **CRX73,CRX74**



① Antenna
② Front Right (+)
③ Grey
④ Front Right (−)
⑤ Grey/Black
⑥ Front Left (+)
⑦ White
⑧ Front Left (−)
⑨ White/Black
⑩ Rear Left (+)
⑪ Green
⑫ Rear Left (−)
⑬ Green/Black
⑭ Rear Right (+)
⑮ Purple
⑯ Rear Right (−)
⑰ Purple/Black
⑱ Accessory +12 V
⑲ Red
⑳ Ground
㉑ Black
㉒ Auto Antenna
㉓ Blue/White
㉔ Illumination
㉕ Orange/White
㉖ Permanent
㉗ Yellow
㉘ Amp Remote (Blue/White)
㉙ Interface connector for desired car application.
㉚ Phone Mute (to external mute lead of cellular telephone)
㉛ Brown
㉜ Digital Control Lead
㉝ Pink/White
㉞ RCA Line Output (Black lead) for connection to external amplifier
㉟ Red (Rear Right)
㊱ White (Rear Left)
㊲ RCA Line Output (Grey lead) for connection to external amplifier
㊳ Red (Front Right)
㊴ White (Front Left)
㊵ 13-pin DIN Connector for connection to CD Changer

■ CATS III (Computer Art:- Theft System III):

• **CRX73,CRX74**

Operation

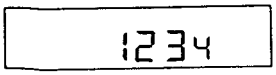
[1] Entering the CATS Code

1. If the power is turned on, press the Power switch ① to turn the unit off.
2. Press the T.MODE button ⑦, and while keeping it pressed, press the Power switch ① to turn on the power. This will enable input of the CATS code.

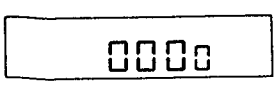
Digital Display

"0000" starts blinking on the display.

3. Input an arbitrary 4-digit number using the Preset buttons (1 to 5) ⑨.

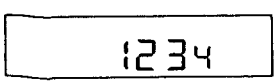


(Example) Input 1-2-3-4



"0000" starts blinking again.

4. Input the same four digits again.



(Example) Input 1-2-3-4

When the second input of the CATS code has been correctly done, the CATS code is registered. The unit's power turns on after **"CODE"** appears on the display.

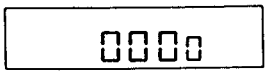
Notes:

1. In case you have input a wrong 4-digit code in step 3: If, for example you input 2-2-3-4 instead of 1-2-3-4, input any 4-digit number other than 2-2-3-4 in step 4. The unit will then return to the condition in step 2, where **"0000"** blinks on the display. Continue by keying in the correct CATS code.
2. If the input numbers in step 3 and 4 do not match: If you input, for example, 1-2-3-4 in step 3 and then 2-2-3-4 in step 4, the unit will return to its original condition. Continue with steps 3 and 4.
3. In case you realise your mistake before entering all 4 digits in step 3 or 4, enter any digits to complete the entry. Then proceed as explained in notes 2 or 3 above.
   Proceed in the same way to correct input mistakes made during "[2] Releasing CATS" or "[3] Erasing and Changing the CATS Code".

[2] Releasing CATS (when you have removed the car stereo or sent the car for servicing)

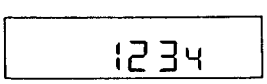
1. Turn the power on by pressing the Power switch ①.

Digital Display



"0000" starts blinking on the display.

2. Input your CATS code.



(Example) Input 1-2-3-4

[3] Erasing and Changing the CATS Code

1. If the power is turned on, press the Power switch ① to turn the unit off.
2. Press the T.MODE button ⑦, and while keeping it down, press the Power switch ① to turn on the power.

Digital Display

0000	"0000" starts blinking on the display.

3. Input your CATS code.

1234	The CATS code has now been erased, and the unit will operate normally. To input a new CATS code, follow the steps in [1] Entering the CATS Code.

When the erasure of the CATS code has been completed, the power to the unit will be switched on.

Note: In case you input a wrong CATS code in step 3, you must wait for 15 seconds before the unit accepts a new code. In this case, return to "[2] Releasing CATS", then input the correct CATS Code as explained in [2] 2., operate the unit, then perform the steps in "[3] Erasing and Changing the CATS Code".

■ AUDIO MODE DISPLAL and OPERATIONS:

• CRX73,CRX74

■ Audio Mode Display and Operations

Up/Down Buttons / Audio Mode	∨	Centre Position (flat response)	∧	Operation
VOL (volume control)	Vo 0	Vo 13 **Note 3** (initial setting)	Vo 33	When the numerical value decreases, the volume level is lowered; when the numerical value increases, the level goes up.
BASS (bass control)	BA -7 (negative display)	BA 0	BA 7	A negative value indicates a bass cut while a positive one indicates a bass boost. (Adjustment range is −7 to 7.)
TREB (treble control)	TR -7 (negative display)	TR 0	TR 7	A negative value indicates a treble cut while a positive one indicates a treble boost. (Adjustment range is −7 to 7.)
BAL (left/right balance control)	BL 9 (Balance Left)	B 0	BR 9 (Balance Right)	"B0" indicates equal volume levels in both channels. When the "BL" value increases the volume in the left channel increases, and if the "BR" value increases the volume in the right channel increases.
pre-FAD (front/rear balance control)	FR 9 (pre-Fader Rear)	F 0	FF 9 (pre-Fader Front)	"F0" indicates equal volume levels in the front and rear speakers. When the "FR" value increases the volume in the rear speakers increases, and if the "FF" value increases the volume in the front speakers increases.

Note 1: In the BAL and pre-FAD modes, the control steps will not correspond to the indicated values because of the large number of steps.

Note 2: The original display reappears approximately 5 seconds following adjustment of the various audio modes.

Note 3: When the power is first turned on or after the set is installed in the car, the various audio modes are set to the following values: VO13, BA0, TR0, B0 and F0.

■ CASSETTE TAPE OPERATIONS:

• **CRX73,CRX74**

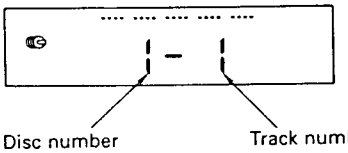
Button No. and Mode of Operation		Display	Explanation of the Display
Tape playback (during playback on top side)		TAPE	The Tape Transport indicator moves slowly from left to right. ("TAPE" display)
㉓ and ㉔	Change in playback direction (programme change) (during playback on bottom side)	TAPE	The Tape Transport indicator moves slowly from right to left. ("TAPE" display)
㉓ or ㉔	Fast-forward or rewind (FF) (REW)	TAPE	The Tape Transport indicator flashes. ("TAPE" display)
㉓ or ㉔	Fast-forward or rewind search (FF APC) (REW APC)	TAPE APC	The Tape Transport indicator flashes. ("TAPE" display)
PAC (Place A Cassette)		PAC	Displayed when no cassette tape is loaded in the deck. ("PAC" display)

■ CD CHANGER CONTROL OPERATIONS:

• **CRX73,CRX74**

*** CD Changer Mode Selector Button ☛ ㉕**

Use this button to switch from the Tuner or Tape mode to the CD changer mode. When the CD Changer Mode Selector button ㉕ is pressed, the " CD " indicator ⑤, disc number and track number appear on the display and the disc playback starts.



Note 1: If no magazine is loaded into the CD player, "DISC" appears on the display and the unit returns to the previous mode.

Note 2: The unit will also set the previous mode if no disc is loaded in the CD changer's magazine.

Note 3: If the CD changer is not connected at all or not connected properly (incorrect wiring, etc.), " CD " flashes on the display and the unit returns to the previous mode when the CD Changer Mode Selector button ㉕ is pressed.

*** Last Position Memory Function**

When a compact disc has played once, playback starts from the beginning of the track which was playing before the power was turned off or before switching to another mode.

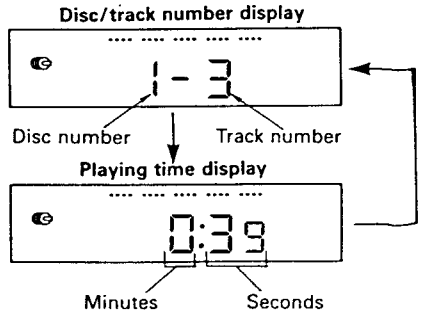
Note: When the magazine is removed, the memory is cleared, and playback starts from the first track on the disc with the lowest number in the magazine.

*** Pause Function ☛ ㉕**

Playback on the CD Changer will pause when the CD Mode Selector button ㉕ is pressed in the CD changer mode.

*** Display Mode Selector Button (DISPLAY) ☛ ⑥**

Normally the disc number and track number are displayed during disc playback. When the DISPLAY button ⑥ is pressed once, the disc/track number display switches to the playing time, then back to the disc/track number display when pressed again.



*** Disc Up Selector Button (DISC) ☛ ⑰**

When the DISC button ⑰ is pressed, playback begins on the disc with the number following the disc number currently displayed.

The disc number then changes each time the DISC button ⑰ is pressed, and the disc with the number currently displayed is played.

If there is no disc loaded in the magazine at the number shown on the display, the disc/track number display flashes, and playback automatically begins from the next disc.

* **Track Search Buttons** ☛ ⑱, ⑲
When the ≪ button ⑱ (or ≫ button ⑲) is pressed (for less than 1 second), the track number display changes, the beginning of the following (or currently playing) track is searched for and playback begins.

* **Forwarding and Reversing Buttons** ⑱, ⑲
The pickup is moved forward (or in reverse) when the ≪ button ⑱ (or ≫ button ⑲) is pressed and held in for more than 1 second. If the button is held in for more than 5 seconds, the pickup is moved forward (or in reverse) at 15 times the normal playback speed. When the button is released, forwarding (or reversing) stops and normal playback resumes from that point.

* **Repeat Playback Button (RPT)** ☛ ⑪
  - **Track Repeat**
    This function is used for repeating playback of the track which is currently playing.
    When the RPT button ⑪ is pressed (for less than 2 seconds), the " ↻ " indicator ⓤ appears on the display, and the currently playing track is played repeatedly. Press the RPT button ⑪ again to cancel the track repeat mode.
  - **Disc Repeat**
    This function is used for repeating playback the disc which is currently playing.
    When the RPT button ⑪ is pressed and held in for more than 2 seconds, **"DISC"** and the " ↻ " indicator ⓣ, ⓤ appear on the display, and the disc repeat mode is set.
    Press the RPT button ⑪ again to cancel the disc repeat mode.

* **Scan Button (SCN)** ☛ ⑫
  - **Track Scan**
    This function is used for playing the beginning of the tracks for approximately 10 seconds each, and comes in handy when searching for a certain track. When the SCN button ⑫ is pressed (for less than 2 seconds), the **"SCN"** indicator ⓥ lights, and scanning starts from the track following the currently playing track.
    Once the beginning of the last track on the disc is played, scanning automatically continues from the next disc. When you hear the track you want, press the SCN button ⑫ again to stop scanning and resume normal playback.
  - **Disc Scan**
    This function is for playing the beginning of track number 1 on each disc for approximately 10 seconds each, and comes in handy when searching for a certain disc.
    When the SCN button ⑫ is pressed for more than 2 seconds, the **"DISC"** and **"SCN"** indicators ⓣ, ⓥ light and the disc scan mode is set.
    When you hear the disc you want, press the SCN button ⑫ again to stop scanning and resume normal playback.

* **Top Play Button (TOP)** ☛ ⑬
Use this to return to the first track on the disc. When the TOP button ⑬ is pressed, playback starts from the first track on the disc.

* **Random Playback Button (RDM)** ☛ ⑮
This function is used for playing all tracks on all discs or all tracks on one disc only in random order.
  - **Random Playback of All Tracks, One Disc at a Time**
    When the RDM button ⑮ is pressed (for less than 2 seconds), the **"RDM"** indicator ⓦ appears on the display, and all the tracks on the disc are played in random order.
    Once all the tracks on that disc are played, the unit searches for the next disc, and if there is another disc in the magazine, the tracks on that disc are played in random order.
    The random playback mode is cancelled by pressing the RDM button ⑮ again.
  - **Random Playback of All Tracks on All Discs**
    When the RDM button ⑮ is pressed for more than 2 seconds, **"DISC"** and the **"RDM"** indicators ⓣ, ⓦ appear on the display, and tracks from any of the loaded discs will be played at random.
    The random playback mode is cancelled by pressing the RDM button ⑮ again.
    Note: In some cases, the same track may be played repeatedly.

■ **This unit is equipped with a variety of self-diagnostic functions for the protection of the system. If trouble arises, the corresponding error display appears, issuing a warning. Follow the recommended corrective measure below to eliminate the trouble.**

Error Display	Corrective Measure
HHHH	In the CD changer mode a rise of the internal temperature of the CD changer has caused the unit to automatically stop CD playback. →Lower the surrounding temperature of the CD changer and wait for a while.
ER 1	Error display indicating that in the CD changer mode the built-in in the CD changer has been exhausted. →Check the CD changer owner's manual.
ER 2	Error display indicating that in the CD changer mode a fault has occurred in the CD changer mechanism. (For example, the disc cannot be changed.) →Contact your store of purchase since there is probably a breakdown of the CD changer mechanism.
ER 3	Error display indicating that during CD changer playback, the pick-up focus is not properly aligned due to a scratched disc, or some other cause. →Check the discs in the magazine.

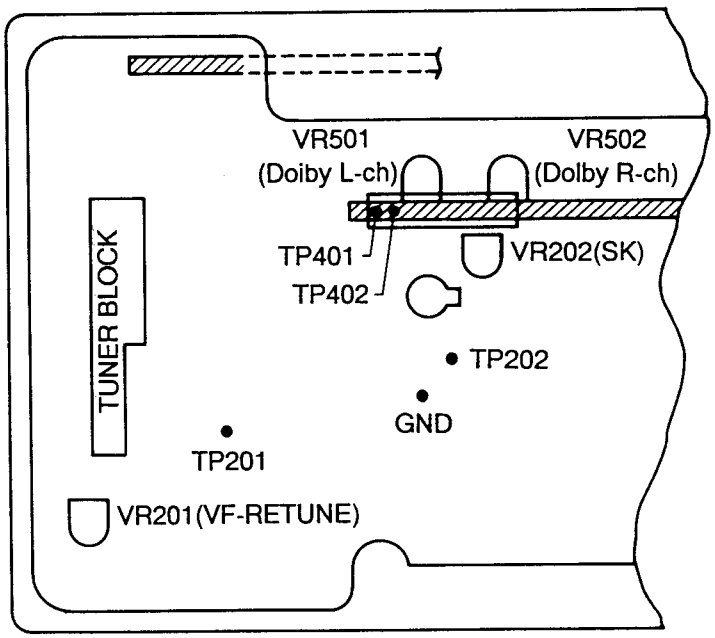
※ If a display that is not described here appears, press the Reset button ⑧. If the unit still does not return to normal operation, switch off the power to the unit and contact your store of purchase.

■ ADJUSTMENTS:

Adjustment item	Adjustment point	Procedure
SK (CRX73 ONLY)	VR202	1. Apply SK modulation only by adjusting SG input to 98.1MHz,65dB. (L+R,PILOT,BK,DK=OFF) 2. Connect a 10:1 probe to TP202,and adjust VR202 until waveform indicated on the oscillator becomes maximum. (AC MODE)
VF-RETUNE Sense (CRX73 ONLY)	VR201	1. Apply modulation frequency of 400Hz(100% MOD) by adjusting SG input to 98.1MHz,25dB. (L+R,PILOT,BK,DK=ON) 2. Connect a 10:1 probe to TP201,and adjust VR202 until waveform indicated on the oscillator becomes ⎍⎍⎍ (DC MODE)
Dolby NR	VR501(L) VR502(R)	1. Insert a Dolby level test tape (400Hz-200nWb/m), connect the millivolt meter to TP401(R) and TP402(L), and adjust VR502(R) and VR501(L) to obtain an output of 300mV±1dB. (Dolby switch : OFF)

• **ADJUSTMENT POINT**

Top View

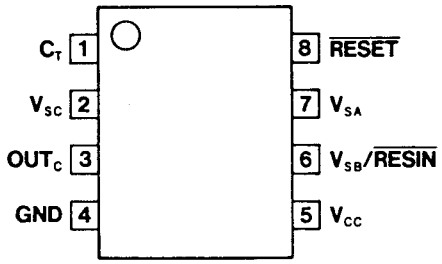


■ EXPLANATION OF IC's:

※IC's other than explained below are described in Service Manual 「EXPLANATION OF IC's」 Vol.2~Vol.4.

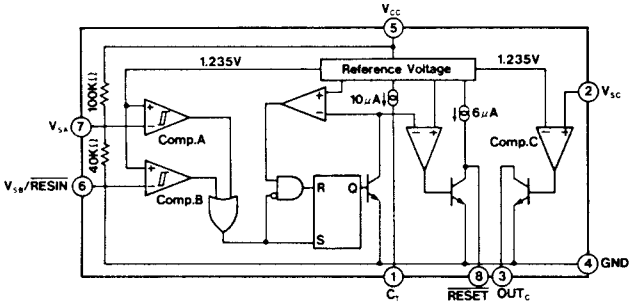
■NJM2103D 051-0869-50 System Reset

Terminal Connection



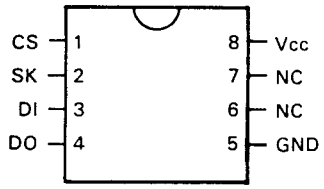
(Top View)

Block Diagram



■NM93C06EN 051-1688-00 256 Bit Serial EEPROM

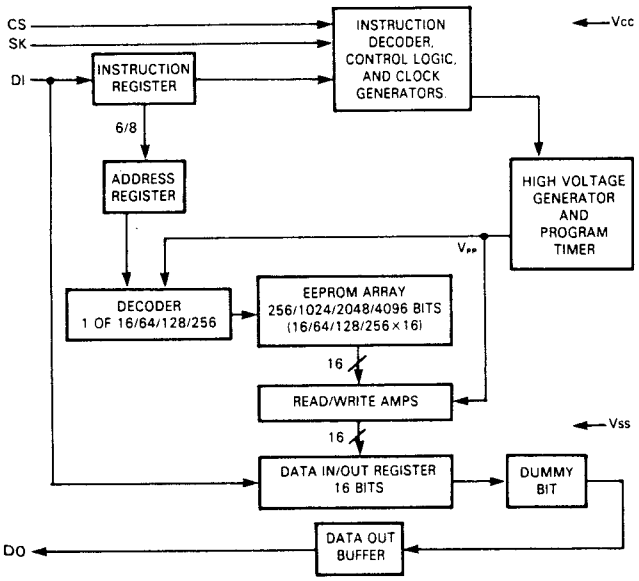
Terminal Connection



Top View

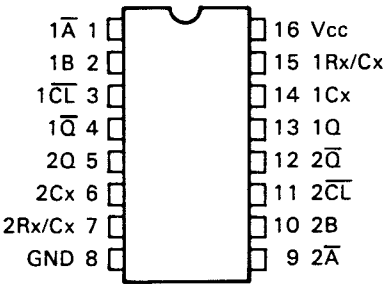
CS	Chip Select
SK	Serial Data Clock
DI	Serial Data Input
DO	Serial Data Output
GND	Ground
Vcc	Power Supply

Block Diagram



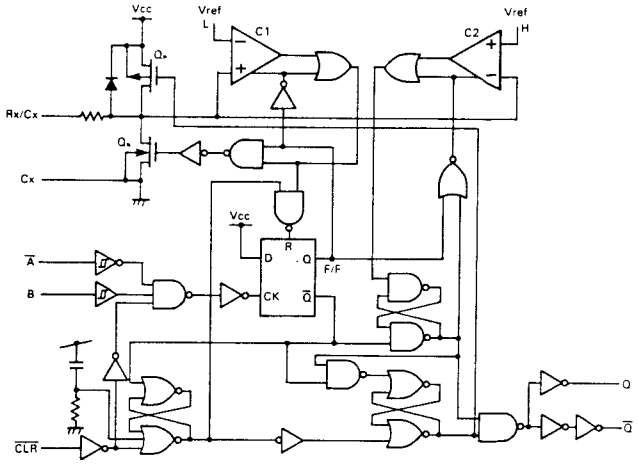
■TC74HC123AP 051-1139-01 / MM74HC123AN 051-1139-41 Multivibrator

Terminal Connection



(Top View)

Block Diagram



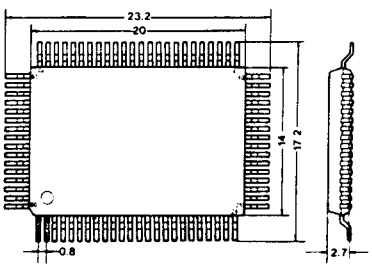
Truth Table

INPUT			OUTPUT		NOTE
A	B	$\overline{CL}$	Q	$\overline{Q}$	
↓	H	H	⊓	⊔	OUTPUT ENABLE
X	L	H	L	H	INHIBIT
H	X	H	L	H	INHIBIT
L	↑	H	⊓	⊔	OUTPUT ENABLE
L	H	↑	⊓	⊔	OUTPUT ENABLE
X	X	L	L	H	INHIBIT

X : Don't Care

■μPD75312GF-145-3B9 051-1690-00 SYSTEM CONTROLLER

I. Outward Form



II. Terminal Decscription

Pin No.	Symbol	I/O	Function
1 〜 16	S12 〜 S27	O	Segment output for LED ON.
17 〜 20	KO0 〜 KO3	O	Key scan signal output terminals. (Active "Hi")
21 22	COM0 COM1	O	Common signal output ports for LCD ON.
23 24	COM2 COM3	O	Not in use. (OPEN)
25 26 〜 28	BIAS VLC0 VLC1 VLC2	– – – –	Supply terminals for LCD drive power.
29	5V REMOTE	O	5V remote signal output terminal.
30	+B REMOTE	O	+B remote signal output terminal. (Active "Hi")
31	AMP-REMOTE	O	Amp-remote signal output terminal. (Active "Hi")
32	TAPE/AUX	O	Audio switching signal output in Tape/Other mode. "Hi" in Tape, "Lo" in AUX.
33	Vss	–	Ground.
34	ILLUMI	O	ILLUMI switch signal output terminal. (Active "Hi") With "Hi" output and, then, with DISP and T-MODE keys pushed together, the initial ILLUMI switch signal output terminal is switched to "Lo".
35	MUTE	O	System Mute signal output terminal. With "Lo" output, Mute is applied to main body.
36	APC	O	APC control signal output terminal.
37	METAL	O	Metal ON/OFF signal output. "Hi" with Metal ON.
38	Acc-IN	I	Acc ON/Power ON detect terminal. (Active "Hi") With Acc power turned on and also with power SW turned on, Acc IN port becomes "Hi", detecting power supply. Then, microcomputer enters Operation mode. With this port at "Low", power OFF is detected and then microcomputer enters Standby mode.
39 40 41	SBI/SCK SBI/SBO SBI/SBI	O O I	Serial clock SCK output terminals for serial bus line interface. I/O terminal for serial data bus SBO (SBI).
42	PACK IN	I	Cassette pack detection input. "Hi" with Pack IN and "Lo" with Pack Out.
43	BATTERY	I	Battery low detection terminal. (Active "Lo") With a 6V battery having run down, this terminal becomes "Lo". In sub-system clock specification, clock count is stopped. At other times, this terminal is pulled up by Vcc.
44	FF/REW	I	FF/REW detection terminal. "Hi" : REW, "Lo" : FF
45	$\overline{SRQ}$	I	SRQ signal input terminal. Input terminal for interrupt signal from slave microcomputer.
46	DOLBY ON/OFF	O	DOLBY ON/OFF output terminal. "Hi" : OFF, "Lo" : ON
47	N.C	O	Not in use.
48	VOL CE	O	Output terminal for CE signal to electronic volume IC.
49	Period	O	Output terminal for period signal to PLL IC. Period signal output terminal for data transfer to PLL IC.
50	CLK	O	Clock signal output terminal jointly used at electronic Vol IC and PLL IC.
51	DI/DO	I/O	I/O terminal of DATA signal. I/O port of Data signal jointly used at electronic Vol IC and PLL IC. Serves as an output port at electronic Vol IC, while serving as an I/O port at PLL IC. When data are not transferred, kept as an input port.
52	N.C	I	Not in use.
53	$\overline{ST}$/$\overline{TWEET}$	I/O	ST. TWEET signal output terminal. FM: ST signal detection AM: TWEET signal output (Active "Lo")
54	V_{DD}	–	Power supply terminal. (+5V)
55	FWD/REV	I	FWD/REV detection terminal. "Hi": REV, "Lo": FWD
56	N.C	–	Not in use.
57	N.C	–	Not in use.
58 59	X1 X2	– –	Crystal connection terminals for main system clock oscillation. (4.19MHz)
60	SK IN	I	SK detection terminal.
61	SD IN	I	SD detection terminal.
62 〜 67	KI0 KI1 KI2 KI3 KI4 KI5	I	Key scan signal input terminals. (Active "Lo")
68	$\overline{RESET}$	I	System reset terminal. (Active "Lo")
69 〜 80	S0 〜 S11	O	Segment signal output terminal for LED ON.

III. Key Matrix

§ 1. Key Matrix Table

(Note) All of these keys are not always provided on the sets equipped with this microcomputer.

KEY IN / KEY OUT	K15 Pin 67	K14 Pin 66	K13 Pin 65	K12 Pin 64	K11 Pin 63	K10 Pin 62
K00 Pin 17	AUDIO UP	CH1	CH2	CH3	SEARCH UP	PHONE INT
K01 Pin 18	AUDIO MODE	CH4	CH5	PS/AS	SEARCH DOWN	DK INT
K02 Pin 19	AUDIO DOWN	MUTE	LOUD	BAND	TUNING MODE	LINE OUT
K03 Pin 20	TAPE	TUNER	CD CHANGER	VF(MUTE) *1	DISPLAY	VF Y/N *1

: Momentary SW : Diode SW

§ 2. Diode SW

SW Name	Function
LINE OUT	Switch selecting channel Number of Line Out terminal. In the table below, "0" indicates Open and "1" Mute. LINE OUT / Specification: 0 – 4CH; 1 – 2CH
VF Y/N	Switch selecting VF setting (traffic information) if provided or not. *1, With VF Not Provided selected in initialization, Mute is set. VF / Specification: 0 – VF Provided; 1 – VF Not Provided

■ PARTS LIST:

◎Electrical section

Note : Several different parts listed in the column are alternative parts. One of those parts is used in the set.

◎MAIN P.W.B. [ ] :USE ONLY CRX73

REF. NO.	PART NO.	DESCRIPTION	Q'TY
D701~704,706 707,708,709 710,711,713 715,716,719	001-0330-00	Diode (1SS119)	14
	001-0352-00	Diode (1SS176)	
D717	001-0354-30	Diode (MIMA151WK)	1
	001-0354-00	Diode (MA151WK)	
	001-0356-00	Diode (1SS184)	
	001-0506-00	Diode (DAN292K)	
D102	001-0354-35	Diode (MIMA151WA)	1
	001-0354-05	Diode (MA151WA)	
	001-0356-05	Diode (1SS181)	
	001-0507-00	Diode (DAP202K)	
D714	001-0361-10	Diode (1SS198)	1
D101	001-0377-46	Diode (MA4091L)	1
	001-0376-46	Diode (MTZ9.1JA)	
	001-0400-46	Diode (HZS9.1JB1)	
D705	001-0377-48	Diode (MA4091H)	1
	001-0376-49	Diode (MTZ10JA)	
	001-0400-48	Diode (HZs9.1JB3)	
D718	001-0516-00	Diode (MA111)	1
	001-0517-00	Diode (1SS355)	
D712	001-0534-00	Diode (1sr139-100)	1
	001-0466-00	Diode (S5688B)	
	001-0499-00	Diode (ERA15-01)	
	001-0626-00	Diode (1A2)	
TH101	002-0206-01	Thermistor	1
L101	010-2003-04	Coil AM-COIL	1
L102	010-2230-00	Coil 0.1μH	1
L103	010-2230-14	Coil 0.2μH	1
L104	010-2230-38	Coil 220μH	1
VR202	012-3808-05	Variable resistor (4.7K Ω)	1
VR201	012-3808-07	Variable resistor (22K Ω)	1
VR501,502	012-4318-06	Variable resistor (10K Ω)	2
CCT701 ※CRX73	050-0086-00	Component circuit	1
CCT701 ※CRX74	050-0088-03	Component circuit	1
IC706	051-0160-01	IC (HD74LS07P)	1
IC503,504	051-0422-51	IC (NJM4558D)	2
	051-0422-55	IC (BA4558)	
IC301	051-0561-01	IC (AN6263N)	1
IC201	051-0617-51	IC (NJM2903D)	1
IC401,402	051-0853-00	IC (M5201P)	2
IC701	051-0869-50	IC (NJM2103D)	1
IC501	051-1038-00	IC (CXA1102P)	1
IC801	051-1111-20	IC (TA8210AL)	1
IC702	051-1139-41	IC (MM74C123AN)	1
	051-1139-01	IC (TC74HC123AP)	
IC101	051-1373-00	IC (TC9216P)	1
IC703	051-1387-40	IC (MM74HC05AP)	1
	051-1387-00	IC (TC74HC05AP)	

REF. NO.	PART NO.	DESCRIPTION	Q'TY
IC302	051-1516-22	IC (TA8162SN)	1
IC502	051-1516-22	IC (EV1111-2)	1
	051-1516-32	IC (THA5001B)	
IC202	051-1625-10	IC (LA2230P)	1
IC705	051-1688-00	IC (NM93C06EN)	1
IC704	051-1690-00	IC (μPD75312GF-145-3B9)	1
X201	060-0115-04	Ceramic resonator (CSB456FB1)	1
SUP101	060-0122-10	Surge protector	1
X701	060-0130-09	Ceramic resonator	1
X101	061-1066-00	Crystal (7.2MHz)	1
BAT701	088-0034-00	Battery	1
Q711	100-1162-00	Transistor (2SA1162O.Y.G)	1
Q106,107,709 715	100-1317-00	Transistor (2SA1317)	4
Q720	101-1237-50	Transistor (2SB1237-QR)	1
Q301	101-1240-00	Transistor (2SB1240)	1
Q713	101-1243-50	Transistor (2SB1243)	1
Q704	102-1846-00	Transistor (2SC1846)	1
Q706,707	102-2458-00	Transistor (2SC2458)	2
Q108,109,712 714,716	102-2712-00	Transistor (2SC2712)	5
	103-0601-00	Transistor (2SD601A)	
Q102,103	102-2712-51	Transistor (2SC2712-G.L)	2
Q401,402 501~504	103-1306-00	Transistor (2SD1306-D.E)	6
Q702,703	103-1450-00	Transistor (2SD1450)	2
	103-1504-00	Transistor (2SD1504)	
Q104	125-0002-06	Transistor (RN2406)	1
	125-0014-06	Transistor (DTN143ZK)	
Q701	125-2003-03	Transistor (RN1203)	1
	102-3400-00	Transistor (2SC3400)	
	125-2007-02	Transistor (DTL124ES)	
	125-2011-03	Transistor (BA1F4M)	
Q302	125-2003-06	Transistor (RN1206)	1
	125-2007-05	Transistor (DTC143ZS)	
Q101,105,110 705,708,710 718,719	125-2004-03	Transistor (RN1403)	8
	125-2005-02	Transistor (UN2212)	
	125-2020-03	Transistor (DTC124EK)	
C103	171-1033-06	Ceramic chip capacitor (0.01 μF)	1
C704	171-2233-06	Ceramic chip capacitor (0.022μF)	1
C710	173-1031-10	Polyestor capacitor (0.01 μF)	1
C305,306	173-8211-11	Polyestor capacitor (820pF)	2
C409,410	176-1011-00	Ceramic chip capacitor (100pF)	2
C118	176-1201-00	Ceramic chip capacitor (12pF CH)	1
C117	176-1501-00	Ceramic chip capacitor (15pF CH)	1
C703	178-1022-05	Ceramic chip capacitor (1000pF)	1
C101,104,114 116,119 121~123,206 411,412,707 713	178-1032-05	Ceramic chip capacitor (0.01 μF)	13
C307,308	178-1232-05	Ceramic chip capacitor (0.012μF)	2

REF. NO.	PART NO.	DESCRIPTION	Q'TY
C705	178-1532-05	Ceramic chip capacitor (0.015μF)	1
C407,408	178-1822-05	Ceramic chip capacitor (1800pF)	2
C105,108,301	178-2232-05	Ceramic chip capacitor (0.022μF)	3
C201,202	178-3312-05	Ceramic chip capacitor (330pF)	2
C204,205	178-3322-05	Ceramic chip capacitor (3300pF)	2
C106,107,109 302	178-4732-05	Ceramic chip capacitor (0.047μF)	4
C102,303,304 313,314	182-1053-62	Electrolytic capacitor (50V 1μF)	5
C120,709	182-1063-32	Electrolytic capacitor (16V 10 μF)	2
C520	182-1073-22	Electrolytic capacitor (10V 100μF)	1
C405,406,503 504,509~514 516~519,701	182-4753-52	Electrolytic capacitor (35V 4.7μF)	15

REF. NO.	PART NO.	DESCRIPTION	Q'TY
C115	182-4763-12	Electrolytic capacitor (6.3V 47μF)	1
C207,311,312 702	183-1063-32	Electrolytic capacitor (16V 10 μF)	4
C203,208	183-2263-12	Electrolytic capacitor (6.3V 22μF)	2
C113	183-3353-62	Electrolytic capacitor (50V 3.3μF)	1
C309,310,708	183-3363-22	Electrolytic capacitor (10V 33 μF)	3
C401~404,501 502,506,515	183-4753-52	Electrolytic capacitor (35V 4.7μF)	8
C209,210,706	183-4763-12	Electrolytic capacitor (6.3V 47μF)	3
C507,508	183-6843-62	Electrolytic capacitor (50V 0.68 μF)	3
C505	184-2273-21	Electrolytic capacitor (10V 220μF)	1
C112	184-2273-22	Electrolytic capacitor (10V 220μF)	1
C711	184-4773-32	Electrolytic capacitor (16V 470μF)	1

◎ POWER P.W.B.

REF. NO.	PART NO.	DESCRIPTION	Q'TY
D803	001-0188-01	Diode (1S1885A)	1
D804,805	001-0334-00	Diode (DSA17B)	2
D801	001-0377-47	Diode (MA4091M)	1
D802	001-0423-31	Diode (MA4180)	1
T801	009-0633-01	CHoke	1
C816	042-0334-25	Electrolytic capacitor (16V 47 μF)	1
C805,808	042-0334-27	Electrolytic capacitor (16V 22 μF)	2
C817	042-0334-32	Alumi electrolytic capacitor (16V 100μF)	1
C807	042-0439-00	Alumi electrolytic capacitor (10V 220μF)	1
C815	042-0447-00	Alumi electrolytic capacitor (16V 2200 μF)	1
C819	042-0489-00	Tantalum capacitor (10V 47 μF TAN)	1
C801,802	042-0490-00	Alumi electrolytic capacitor (16V 4.7μF NP)	2

REF. NO.	PART NO.	DESCRIPTION	Q'TY
C803,804	042-0490-01	Alumi electrolytic capacitor (35V 2.2μF NP)	2
C814	043-0244-01	Plastic film capacitor (0.1μF)	1
IC802	051-1152-00	IC (AN8006)	1
Q803	101-1143-50	Transistor (2SB1143-ST)	1
Q801	103-1683-50	Transistor (1683-ST)	1
Q802	103-1858-50	Transistor (2SD1858-QR)	1
C810~813	173-1541-10	Polyestor capacitor (0.15 μF)	4
C822,823	173-8221-18	Polyestor capacitor (8200pF)	2
C821	178-1022-05	Ceramic chip capacitor (1000pF)	1
C818	178-4732-05	Ceramic chip capacitor (0.047μF)	1
C808,809	178-5612-55	Ceramic chip capacitor (560pF)	2
C820	178-1032-05	Ceramic chip capacitor (0.01 μF)	1

■ HOW TO READ RESISTOR:

Resistors are deleted from the table of electric components, (except special resistors).
They can be converted to product Nos. as follows.

Film resistor (Carbon film resistor/Metal film resistor)

□□□-□□□□-□□

Classification	Resistance*	Tolerance of the value of resistance		Rated power			Shape	
1 1 1 (Carbon film resistor)		0	± 2 %	0			0	
	Example	1	± 5 %	1	1/8W	Approx. 3.7mm	1	Horizontal
	33Ω=330	2		2	1/4Ws	Approx. 6.5mm	2	Vertical
	33kΩ=333	3		3			3	
		4		4	1/2W	Approx. 9mm	4	
				7	1/8W	Approx. 3.5mm		
				8	1/2Ws	Approx. 6.6mm		
				9	1/4Wss	Approx. 3.2mm		
1 1 4 (Metal film resistor)		0		1	1 W	Approx. 9.0mm	0	
		1	± 5 %	2	2 W	Approx. 11.0mm	1	Horizontal
		2		3	3 W	Approx. 15.0mm	2	

(Example)

Carbon film resistor | 1kΩ | ±5% | 1/4Wss | Vertical

[1][1][1]-[1][0][2][1]-[9][2]

Note 1. The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this.
Unit is given in ohm (Ω).

Chip resistor

□□□-□□□□-□ 0

Classification	Resistance*	Tolerance of the value of resistance		Rated power		
1 1 6	Example	0	for 0Ω resistor	0	for 0Ω resistor	
	33Ω=330	1	± 5 %	1	1/8W	1.6 mm, 3.2mm
	33kΩ=333	2	±10%	2		
1 1 7		0	for 0Ω resistor	0	for 0Ω resistor	
		1	± 5 %	1	1/10W	1.25 mm, 2.0mm
		2	±10%	2		
1 1 8		0		0		
		1	± 5 %	1	1/2W	3.2 mm, 4.5mm
		2	±10%	2		
1 1 9		0	for 0Ω resistor	0	for 0Ω resistor	
		1	± 5 %	1	1/16W	0.8 mm, 1.6mm
		2	±10%	2		

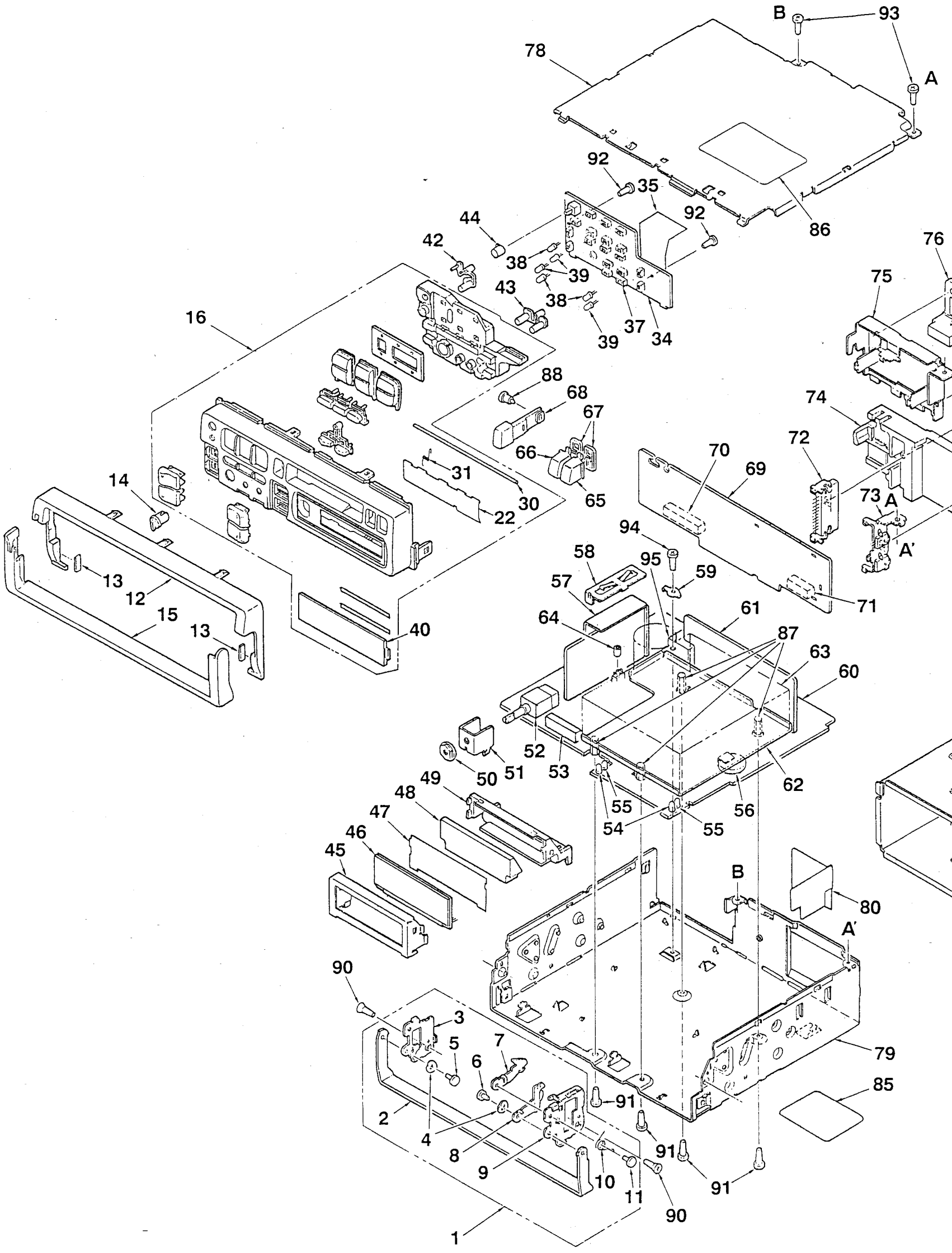
(Example)

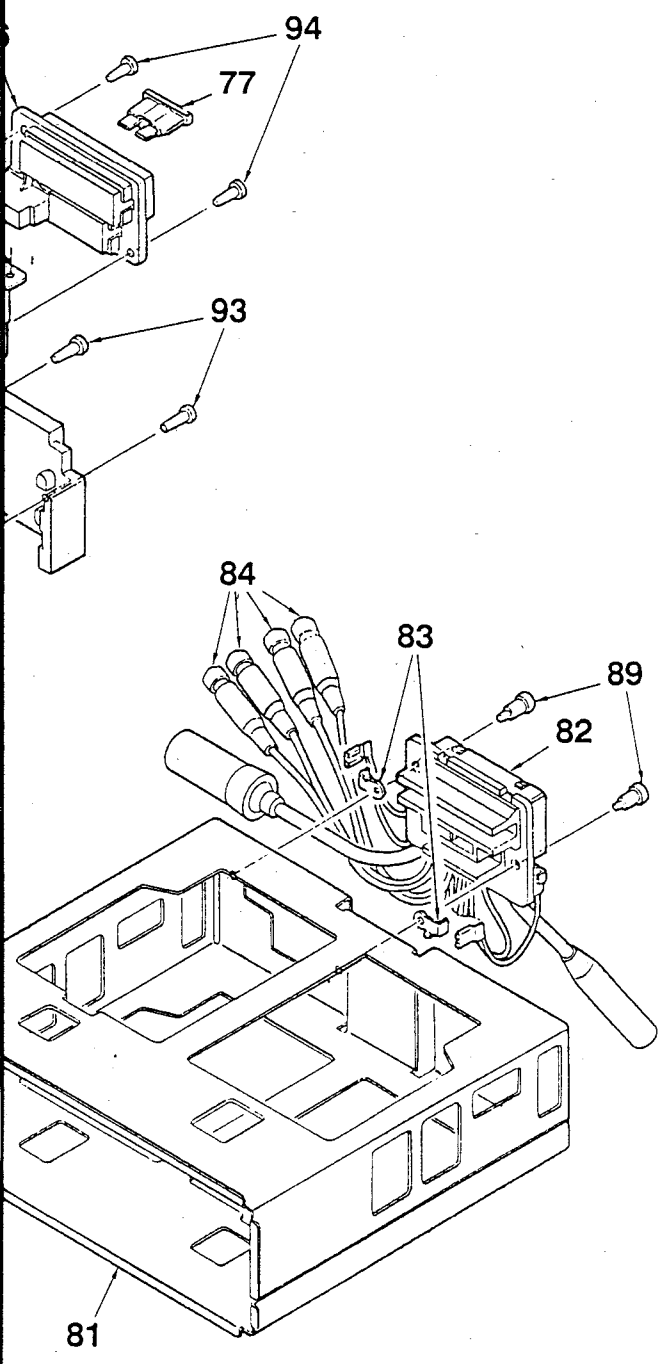
Chip resistor (3.2mm×1.6mm) | 1kΩ | ±5% | 1/8W

[1][1][6]-[1][0][2][1]-[1] 0

■ EXPLODED VIEW • PARTS LIST:

◎ Main section

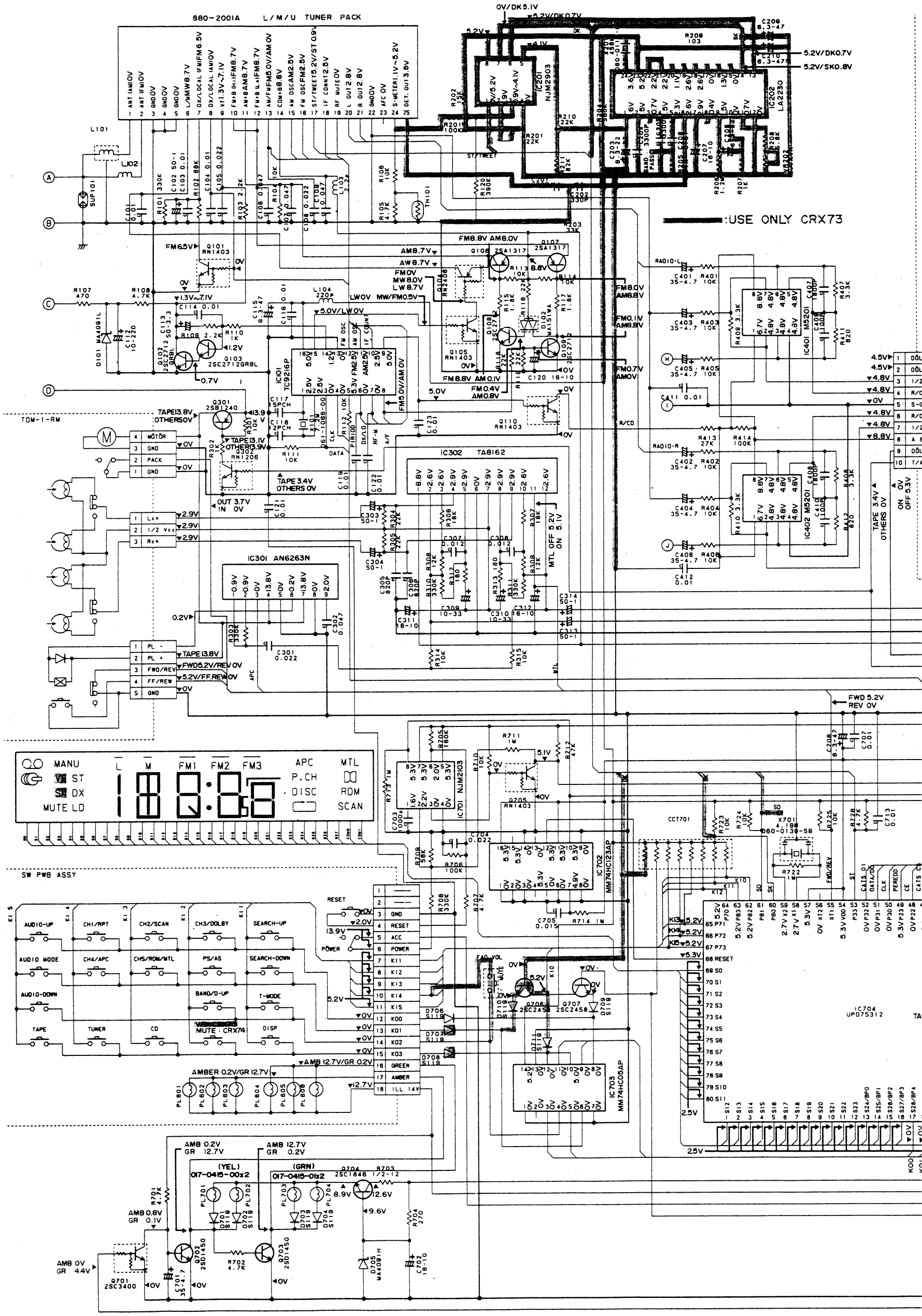




REF. NO.	PART NO.	DESCRIPTION	Q'TY
1	946-0044-00	Mojnting case ass'y	1
2	330-9334-01	Handle	1
3	330-9324-01	Side plate	1
4	746-0776-00	Washer	2
5	399-4221-00	Bolt	1
6	399-4220-00	Bolt	1
7	330-9330-01	Fucke plate	1
8	330-9328-01	Slide plate	1
9	330-9332-01	Slide plate	1
10	750-2833-00	Spring	1
11	399-4137-00	Bolt	1
12	370-5380-00	Escutcheon	1
13	347-3333-00	VHB tape	2
14	380-5257-00	Knob (FADER)	1
15	335-4275-00	Handle cover	1
16 ※CRX73	940-1455A	Escutcheon ass'y	1
16 ※CRX74	940-1462A	Escutcheon ass'y	1
22 ※CRX73	370-5369-04	Escutcheon	1
22 ※CRX74	370-5369-05	Escutcheon	1
30 ※CRX73	320-0485-03	Dust proof cover	1
30 ※CRX74	320-0485-04	Dust proof cover	1
31	750-2530-03	Spring	1
34	099-9722-01	SW P.W.B.	1
35	099-9748-00	FPC	1
36	013-3849-00	Push switch	1
37	013-3741-11	Switch	19
38	017-0416-00	Pilot lamp (14V WHT)	3
39	017-0416-01	Pilot lamp (14V GRN)	3
40	373-0689-01	Dial cover	1
42	382-2988-00	Button (RESET)	1
43	382-2985-00	Button (DISP)	1
44	382-2971-00	Button (POWER)	1
45	330-9918-00	LCD cover	1
46	379-0402-00	Indicator	1
47	347-3667-00	Film	1
48	335-4248-00	Illumi plate	1
49	335-4246-00	LCD holder	1

REF. NO.	PART NO.	DESCRIPTION	Q'TY
50	722-0433-00	Nut	1
51	330-9919-00	Volume holder	1
52 ※CRX73	012-5121-00	Variable resister	1
52 ※CRX74	012-5128-00	Variable resister	1
53	074-0992-18	Plug	1
54	017-0415-00	Pilot lamp (8V YEL)	2
55	017-0415-01	Pilot lamp (8V GRN)	2
56	088-0034-00	Battery	1
57	880-2001A	Tuner pack	1
58	330-9789-00	Earth palte	1
59	073-0689-00	Terminal	1
60	099-9724-01	MAIN P.W.B.	1
62	330-9956-00	Shield plate	1
63	930-0702-85	Tape mechanism	1
64	822-0005-03	Heat proof tube	1
65	382-2969-01	BUtton (FF)	1
66	382-2970-01	Button (REW)	2
67	335-4242-01	Button spaser	1
68	382-2975-01	BUtton (EJECT)	1
69	099-9723-01	AMP P.W.B.	1
70	074-0898-30	Outlet socket	1
71	074-0898-16	Outlet socket	1
72	330-9920-00	IC holder	1
73	330-9922-00	IC holder	1
74	313-1502-00	Heat sink	1
75	330-9921-00	Connector bracket	1
76	854-2908-01	Extension lead	1
77	060-0057-56	Auto fuse	1
78	303-0416-00	Upper cover	1
79	311-1546-02	Lower case	1
80	347-3189-02	Papper parts	1
81	300-7645-02	Mounting bracket	1
82	854-2911-00	Extension lead	1
83	073-0701-01	Terminal	2
84	345-3799-00	Cap	4
85 ※CRX73	286-7850-00	Set plate	1
85 ※CRX74	286-7851-00	Set plate	1
86	285-1410-00	Guide label	1
87	716-0853-01	Stud bolt	4
88	716-1580-00	Screw	1
89	716-1452-00	Connector screw	2
90	731-3008-40	Tap tight screw	2
91	716-0854-00	Del tight screw	4
92	716-0778-00	Wave screw	2
93	714-2606-81	Machine screw	4
94	731-3006-80	Tap tight	3
95	330-9989-00	Shield case	1

■ CIRCUIT DIAGRAM:



AUDIO PWB ASSY

POWER PWB ASSY

IC502 EV1111-02

IC801 TA8210AL

IC503 RC4558

IC504 RC4558

IC501 CXA1102

IC705 NM9306

IC706 HD74LS07

IC704 UPD75312

IC502 pin 1 CE
IC502 pin 2 CLK
IC502 pin 3 DI
IC502 pin 4 D GND
IC502 pin 5 A 8V
IC502 pin 6 L/Ø FL
IC502 pin 7 L/Ø RL
IC502 pin 8 L/Ø GND
IC502 pin 9 L/Ø RR
IC502 pin 10 L/Ø FR
IC502 pin 11 MUTE
IC502 pin 12 AMP-L
IC502 pin 13 S-GND
IC502 pin 14 AMP-R
IC502 pin 15 S-GND
IC502 pin 16 TAPE-L
IC502 pin 17 TAPE-R

IC801 pin 10 AMP REM
IC801 pin 15 AMP-L
IC801 pin 14 S-GND
IC801 pin 13 AMP-R
IC801 pin 12 GND
IC801 pin 11 GND
IC801 pin 10 B/U 5V
IC801 pin 9 A 8V
IC801 pin 8 L/O FR
IC801 pin 7 L/O RR
IC801 pin 6 L/O GND
IC801 pin 5 L/O RL
IC801 pin 4 L/O FL
IC801 pin 3 B/U
IC801 pin 2 B/U 5V
IC801 pin 1 A +B

4.5V ▶ 1 DOL R
4.5V ▶ 2 DOL L
▼4.8V 3 I/2 L
▼4.8V 4 R/C L
▼0V 5 S-GND
▼4.8V 6 R/C R
▼4.8V 7 I/2 R
▼8.8V 8 A 8V
9 DOLBY
10 T/AUX

1 ANT
2 A-GND

1 R-R ⊕
2 R-R ⊖
3 F-R ⊕
4 F-R ⊖
5 F-L ⊕
6 F-L ⊖
7 R-L ⊕
8 R-L ⊖

A
1
2
3
4 B/U
5 A-ANT
6 ILLUMI
7 ACC
8 GND

B
1 S1/SO
2 SCK
3 D IN
4 SRQ
5 —
6 S-GND
7 CD-L
8 CD-R
9 —
10 B/U
11 ACC CONT
12 GND
13 —

1 CD-L
2 S-GND
3 CD-R
4 ACC CONT
5 GND
6 SCK
7 SI/SO
8 SRQ
9 B/U

1 GND
2 ILLUM
3 ACC
4 B/U
5 A-ANT
6 L ⊕
7 L ⊖
8 R ⊕
9 R ⊖
10 R-L ⊖
11 R-L ⊕
12 R-R ⊕
13 F-R ⊕
14 F-R ⊖
15 F-L ⊖
16 GND
17 GND
18 ACC
19 B/U
20 PHONE
21 L ⊕
22 L ⊖
23 R ⊕
24 R ⊖
25 R-L ⊖
26 R-R ⊕
27 R-R ⊖
28 F-R ⊕
29 F-L ⊖
30 F-L ⊕

1 ANT
2 L/Ø GND
3 L/Ø RL
4 L/Ø FL
5 —
6 PHONE
7 ILLUMI
8 ACC CONT
9 B/U
10 SRQ
11 GND
12 CD-L
13 A-GND
14 A-ANT
15 L/Ø RR
16 L/Ø FR
17 —
18 GND
19 ACC
20 B/U
21 SCK
22 SI/SO
23 S-GND
24 CD-R
25 —
26 —
27 —
28 R-L ⊖
29 R-L ⊕
30 F-L ⊖
31 F-L ⊕
32 D IN
33 D OUT
34 —
35 R-R ⊖
36 R-R ⊕
37 F-R ⊖
38 F-R ⊕
39 FUSE
40 FUSE

S20 S21 S22 S23 S24/BP0 S25/BP1 S26/BP2 S27/BP3 S28/BP4 S29/BP5 S30/BP6 S31/BP7 COM0 COM1 COM2 COM3 BIAS
KO0 KO1 KO2 KO3

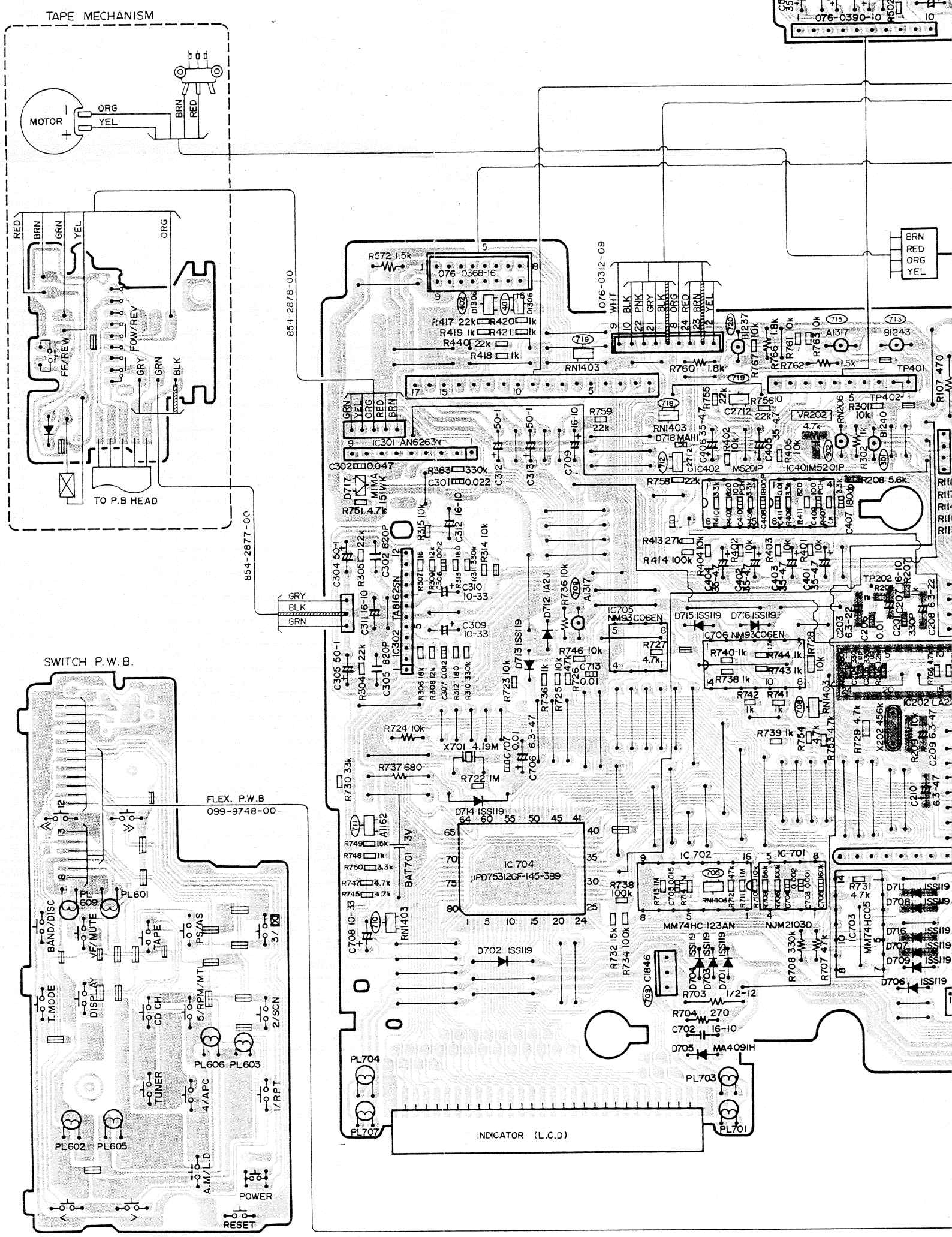
ON OV OFF 5.3V
TAPE 3.4V OTHERS OV
FWD 5.2V REV OV
5.2V/FF.REW OV
Pack IN OV Pack OUT 3.7V
OUT OV IN 5.2V
ON 5.2V OFF OV
D.by ON OV/ 5.3V
0V/TAPE 3.4V
0V/DK0.7V
V/SK0.8V

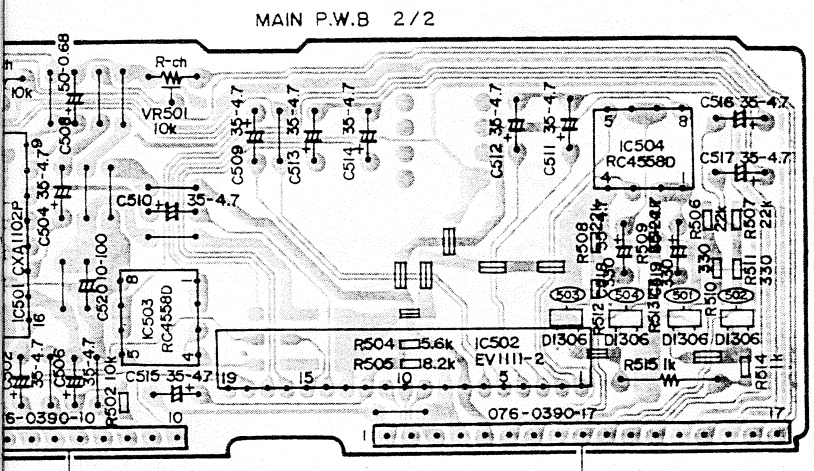
CAIS DI / DATA/DO / CLK / PERECOD / CE / CAIS CS / DOLBY / SRQ / FF / REW / B/U DET / PACK / SI / SO / SCK / ACCDET / MTL / APC / MUTE / M-ILL / GND / T/AUX / AMP REM / +B REM / 5V REM

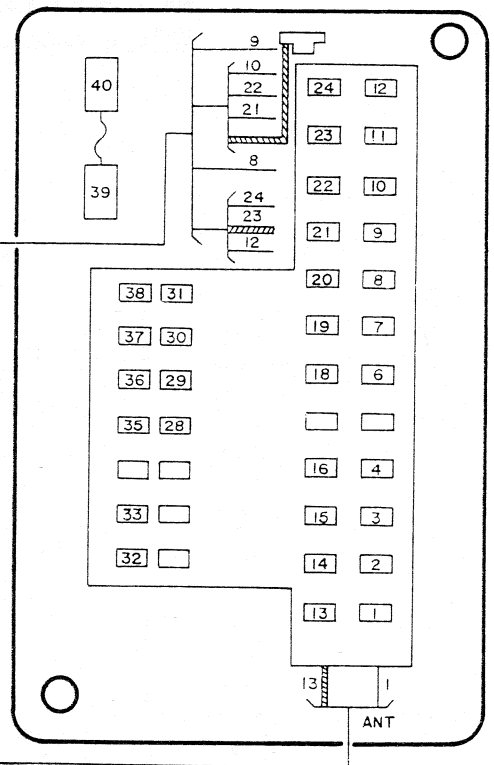
OV XT2 / XT1 / 5.3V VDD / OV P33 / OV P32 / OV P31 / OV P30 / 5.3V P23 / OV P22 / OV P21 / 5.2V P13 / 5.3V P11 / 5.2V P02 / 5.1V P00 / P53 / OV P52 / 4.4V P51 / AMB OV/GR4.4V P50 / OV VSS / TAPE 3.4V/OTHERS OV P43 / 3.8V P42 / 3.5V P41 / 0.1V P40 / 2.5V VLC 2 / 2.5V VLC 1 / 5.0V VLC 0 / 5.3V BIAS

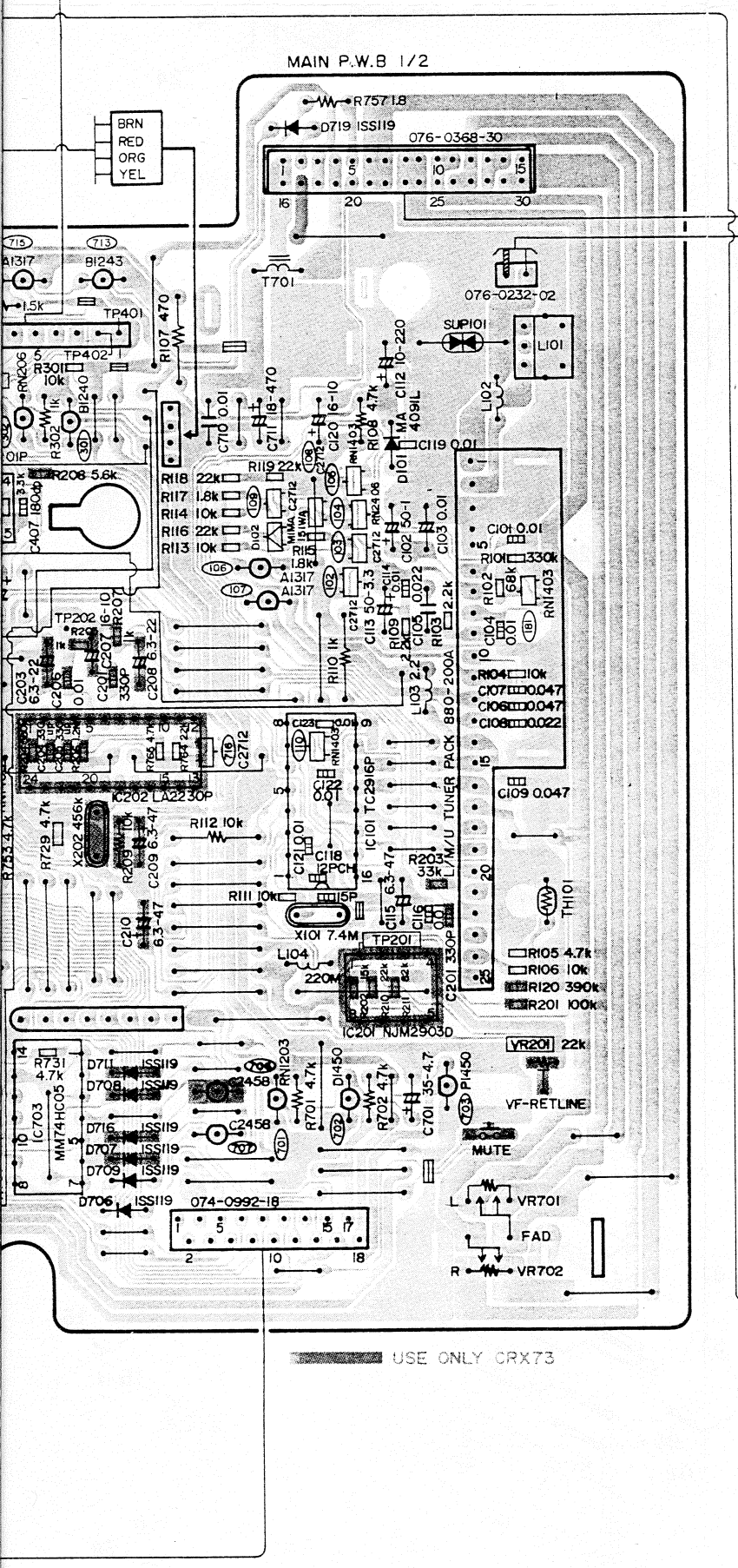
PHONE
ANT IN
L/O G RCA R-L F-L R-R F-R
D OUT
10A
FADER
VR701 50VR
VR702 50VR

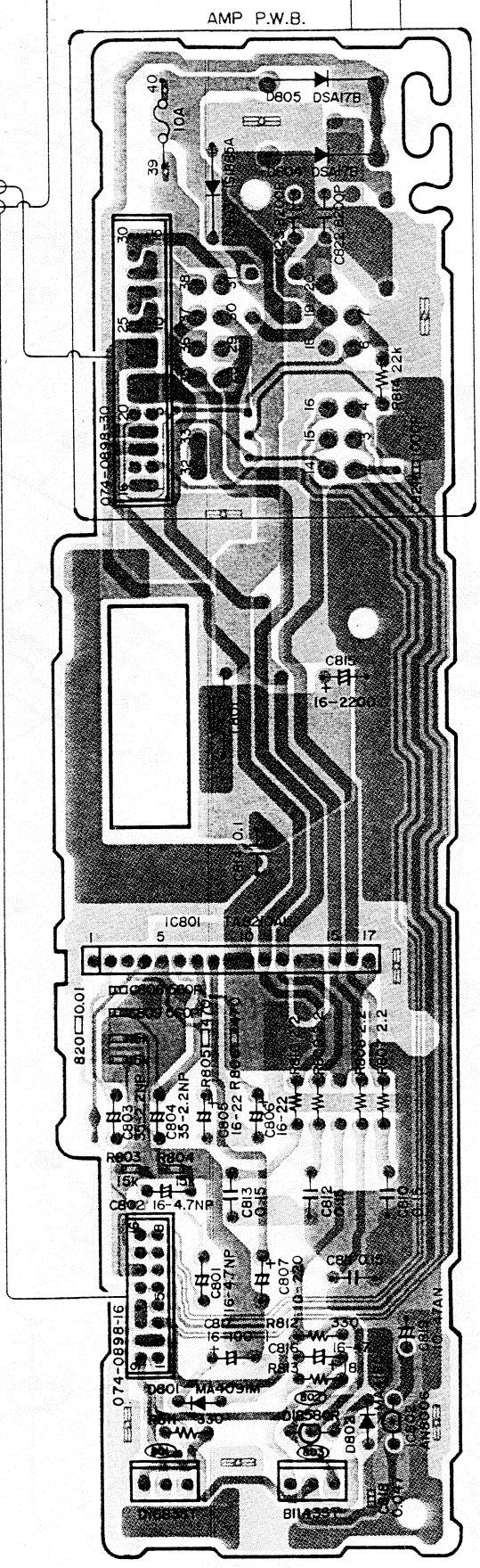
■ PRINTED WIRING BOARD:

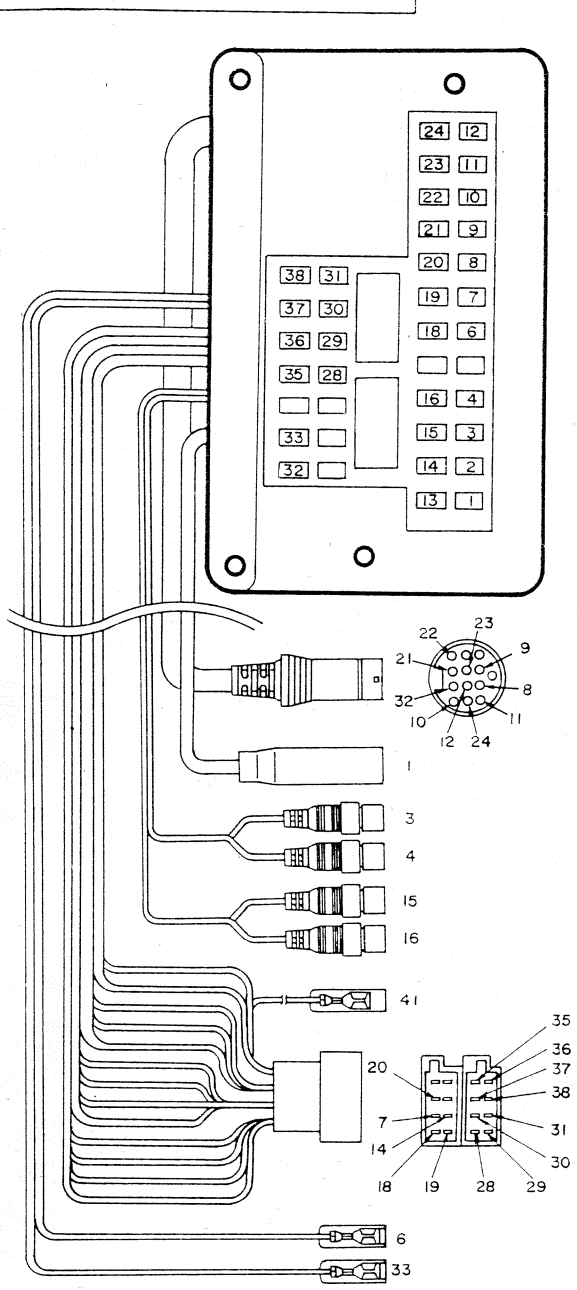










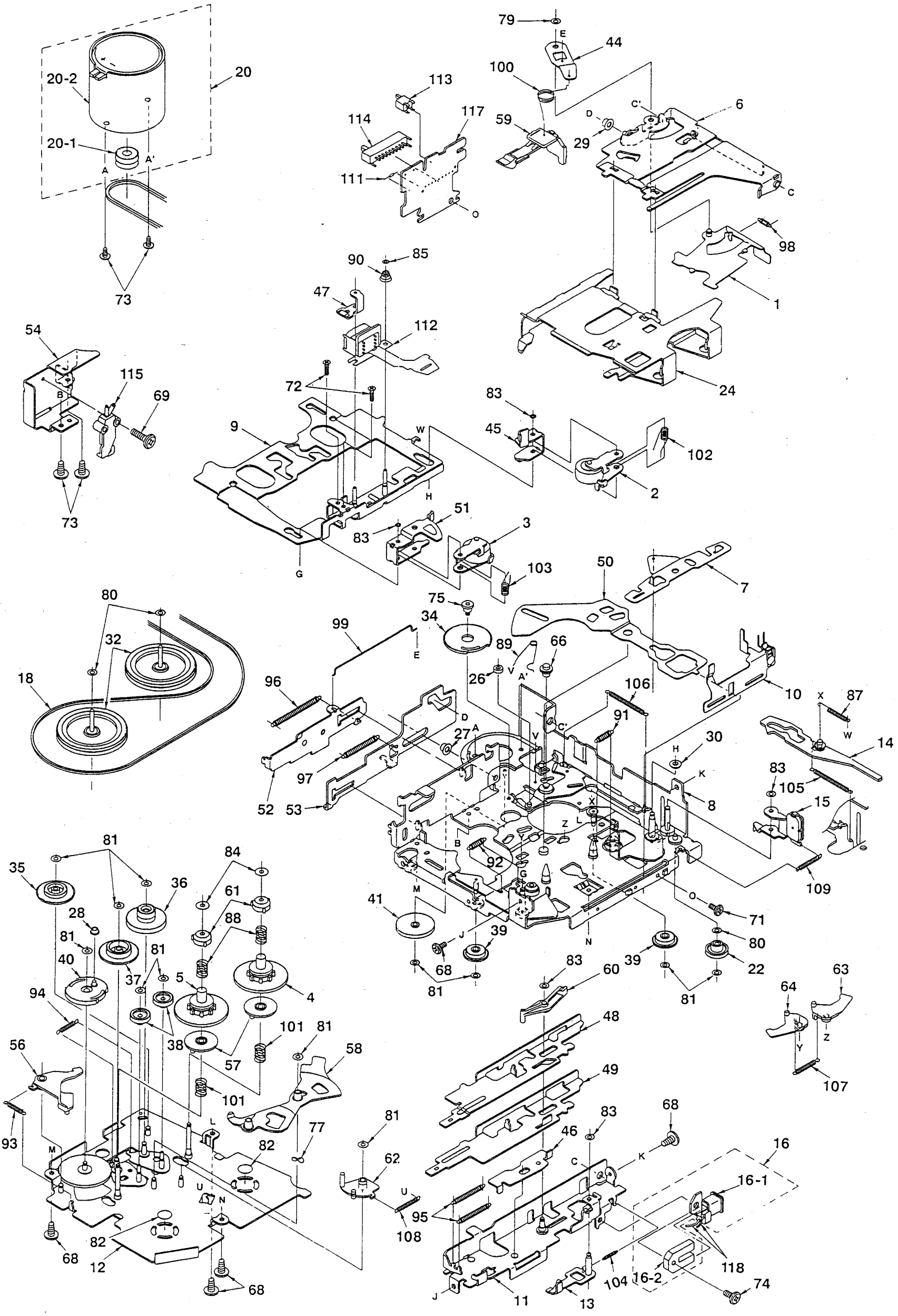


No.	CONNECTIONS	No.	CONNECTIONS
1	ANT.	20	Back Up (YEL)
2	L/O GND	21	SCK
3	L/O Rear Lch (WHT)	22	SI/SO
4	L/O Front Lch (WHT)	23	S-GND
6	PHONE(BRN)	24	CD Rch
7	ILLUMI (ORG/WHT)	28	Rear Lch ⊖ (GRN/BLK)
8	ACC	29	Rear Lch⊕ (GRN)
9	Back Up	30	Front Lch ⊖ (WHT/BLK)
10	SRQ	31	Front Lch⊕ (WHT)
11	GND	32	DIGITAL IN
12	CD Lch	33	DIGITAL OUT (PNK/WHT)
13	A GND	35	Rear Rch ⊖ (PUR/BLK)
14	Auto ANT. (BLU/WHT)	36	Rear Rch⊕ (PUR)
15	L/O Rear Rch (RED)	37	Front Rch ⊖ (GRY/BLK)
16	L/O Front Rch (RED)	38	Front Rch⊕ (GRY)
18	GND (BLK)	41	Amp Remote (BLU/WHT)
19	ACC (RED)		

USE ONLY CRX73

■ EXPLODED VIEW • PARTS LIST:

◎ Tape mechanism section 930-0702-85 (TOM-I-RM)



REF. NO.	PART NO.	DESCRIPTION	Q'TY
1	960-4141-03	Off arm ass'y	1
2	960-4146-02	Roller F ass'y	1
3	960-4147-02	Roller R ass'y	1
4	960-4154-04	Reel F ass'y	1
5	960-4155-04	Reel R ass'y	1
6	960-4194-02	Guide arm ass'y	1
7	960-4203-01	Chenge L ass'y	1
8	960-4309-01	Deck P ass'y RM	1
9	960-4312-02	Head P ass'y	1
10	960-4313-03	HD switch P ass'y	1
11	960-4314-02	Frame ass'y	1
12	960-4315-01	Bottom P ass'y	1
13	960-4316-01	Lock A ass'y	1
14	960-4317-01	Shift P ass'y	1
15	960-4318-00	Planger L ass'y	1
16	015-0232-01	Planger	1
16-1	960-3392-02	Coil ass'y	(1)
16-2	630-1479-02	Core	(1)
18	602-0113-01	Belt	1
20	SMA-135-100	Motor ass'y	1
20-1	603-0109-02	Motor pulley	(1)
20-2	020-0395-00	Motor	(1)
22	604-0024-00	Pulley	1
24	606-0092-02	Pack guide	1
26	610-0293-01	Power roller	1
27	610-0326-00	Eject roller	1
28	610-0328-00	CH roller	1
29	610-0337-00	Guide A roller	1
30	610-0346-00	Head G roller	1
32	611-0087-01	Flywheel	2
34	613-0094-01	Power gear	1
35	613-0258-03	Gear B	1
36	613-0259-02	Gear F	1
37	613-0260-02	Gear R	1
38	613-0261-01	Idler gear	2
39	613-0262-01	FF/REW gear	2
40	613-0264-02	CH gear	1
41	613-0304-00	Gear A	1
44	630-2419-02	Swing arm	1
45	630-2422-04	Release link	1
46	630-2424-04	Select link	1
47	630-2427-01	Azimuth link	1
48	630-2430-04	FF lever link	1
49	630-2431-04	REW lever CR	1
50	630-2432-02	Chenge plate	1
51	630-2436-04	REW link	1
52	630-2445-01	Eject lever CR	1
53	630-2645-00	Eject plate RM	1
54	630-2648-01	Switch base RM	1
56	631-0653-01	Lock link	1
57	631-0656-03	Check plate	2
58	631-0657-02	Check link	1

REF. NO.	PART NO.	DESCRIPTION	Q'TY
59	631-0658-01	Pack stopper	1
60	631-0659-03	Mute link	1
61	631-1967-00	Slide bush	2
62	631-2013-01	Cancel link	1
63	631-2014-01	Brake F	1
64	631-2015-00	Brake R	1
66	632-1886-02	Lock pin	1
68	714-2003-81	Machine screw	5
69	714-2008-81	Machine screw	1
71	716-0891-01	P.W.B. screw	1
72	716-1432-00	Screw (Azimuth)	2
73	716-0484-02	Motor screw	4
74	716-1560-00	Planger screw	1
75	716-1578-00	Screw (Power gear)	1
77	745-0586-03	Washer (Check link)	1
79	746-0622-01	Washer (Off arm)	1
80	746-0624-01	Washer (0.25)	3
81	746-0761-00	Washer	12
82	746-0767-00	Washer (Flywheel)	2
83	746-0768-00	Washer	5
84	746-0813-00	Poly Washer	2
85	746-0832-00	Washer (Head)	1
87	750-2537-02	Over P spring	1
88	750-2564-01	Slide spring	2
89	750-2568-00	Lock spring	1
90	750-2848-00	Azimuth spring	1
91	750-2849-01	FF P spring	1
92	750-2850-01	REW P spring	1
93	750-2852-01	Lock L spring	1
94	750-2853-01	Idler P spring	1
95	750-2854-01	FF/REW spring	2
96	750-2857-02	Eject L spring	1
97	750-2858-01	Eject P spring	1
98	750-2859-00	Off arm spring	1
99	750-2860-00	Lod spring	1
100	750-2861-01	Slot in spring	1
101	750-2919-02	Check spring R	2
102	750-2920-01	Pinch spring F	1
103	750-2921-01	Pinch spring R	1
104	750-3010-01	Lock A spring	1
105	750-3011-00	Shift P spring	1
106	750-3012-00	Power P spring	1
107	750-3013-00	Break spring	1
108	750-3014-00	Cancel spring	1
109	750-3015-01	Planger spring	1
111	001-0330-00	Diode	1
112	011-0321-00	Head	1
113	013-3906-00	Switch (MUTE)	1
114	013-3922-00	Switch (SLIDE)	1
115	013-3924-00	Switch (MAIN)	1
117	099-9573-01	P.W.B.	1
118	800-0607-60	Vinyl cort wire	2

■ BLOCK CIRCUIT DIAGRAM:

◎ AM/FM TUNER BLOCK Ass´y 880-2001A